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APRIL
1949

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AMATEUR RADIO

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EDITORIAL



INSTITUTE MEMBERSHIP

A recent survey of Divisional membership returns reveals some interesting facts which are of importance to the growth and development of the Institute.

Whilst the proportion of full members to A.O.C.P. holders is still maintained at its usual high level, there is nevertheless an indication that some Divisions are not fully cognisant of the desirability of enlisting in our ranks many of those who were trained in radio factories and signals or radar units during the War. Apart from the need for attracting these people into the Institute, there is the national asset aspect to be considered, as all those with an up-to-date knowledge of the electronic art provide a vital nucleus in times of emergency.

There is also a large proportion of existing members who are not A.O.C.P. holders who should be encouraged at the earliest opportunity to qualify for this certificate and thus become full members of the Institute.

The figures under review further reveal that while some of the smaller Divisions are show-

ing marked improvement in recruiting, the larger Divisions are not maintaining the high level of new members recently attained. It is desirable that all concerned investigate this question to ascertain whether proper and effective efforts are being made to attract and assist those interested in the radio art. We look to the larger Divisions to set the lead in this respect as their prospective members are more plentiful than in the smaller Divisions.

The objects of the Institute shall be to encourage and assist all persons interested in any or all aspects of Amateur Radio and allied techniques and to promote the extension of interest and active participation and co-ordination in such pursuits as the above.

We are naturally anxious that all Divisions should always bear these important objects in mind, and by their activity in this direction, strengthen our membership throughout the Commonwealth.

—Federal Executive.

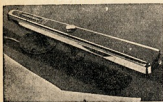
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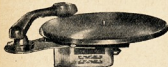
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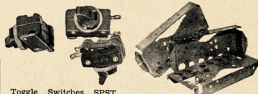
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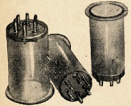
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A HIGH STABILITY, V.F.O.

BY ERN MARSTELLA,* VK2AEZ

Some months ago a new type of oscillator, known as the "Clapp," was featured in "QST," for which very high stability was claimed, and as this oscillator appeared to have good possibilities, the Writer decided to build up a v.f.o. incorporating it, and check its performance.

On completion of the v.f.o., and with the necessary adjustments, it was found to be equal, and in some cases better than some crystals for stability, staying in zero beat with a local b.c. station for four hours. It was then decided the unit was "the answer to a Ham's prayer"—variable frequency with crystal stability, that is not an idle boast.

Another feature of the oscillator is that after allowing a minute or so for tube warm up, it can be used immediately, without any trace of drift. This is an important point, if the Transmitter is put on the air at short notice, when chasing that elusive new country.

Only one fault appeared when the v.f.o. was first put into operation. A faulty 6J5 caused the frequency of the oscillator to jump and drift, but on replacing the tube the trouble vanished.

It is important to remember there is more in building a v.f.o. than putting the necessary components together, so a word of warning to those who wish to build a v.f.o. for the first time.

Variable condensers tuning the oscillator must be good, no backlash, end play, slackness in the bearings, etc. Coils should preferably be air wound, and held together with cemented strips. If formers are used, they should be ribbed and the material used in their construction should be non-porous. Fixed condensers should be silver mica, but these are not readily available here. Mechanical and electrical stability are vitally important, and all wiring should be in heavy gauge wire, and all components rigidly mounted. If we all took more trouble to watch our components, wiring, etc., we would benefit much from it.

The Writer was fortunate in having an American "Cardwell" condenser, with straight line tuning, which had very good bearings, and was double spaced, the plates being of very heavy gauge aluminium.

Referring to the schematic diagram, it will be seen that the oscillator resembles that of the Colpitts, feedback being controlled by the ratio of C4 to C5, and differs from normal methods of

feedback inasmuch as the circuit uses capacity instead of inductance. Frequency is determined mainly by L1, C1, C2, C3 in series, in parallel with the resultant of C4 and C5 in series.

To locate the band, use all wave receiver, and leaving L1, C4, and C5 unaltered, find its frequency of operation. Then bring the frequency to 3.5 Mc. by adjusting C2 and C5.

The inductance L1 is 16½ turns of 22 gauge enamelled wire, slightly stretched, and close wound on a 1½" ribbed former. Make sure the inductance and condensers are mounted in such a way that they are not affected by heat from nearby components. The grid circuit resonates in the 3.5 Mc. band.

The rest of the circuit is self explanatory. V1, the oscillator, is a 6J5, but a 6SJ7, triode connected, or a 6AC7 also triode connected, operate just as well, although calibration will alter if the valves are changed. It might be a good idea to use a small variable condenser across C1, C2, C3 to adjust for difference in frequency. The output of the oscillator is taken from the cathode to minimise loading effects, thereby reducing the output somewhat. Coupling can be done from the plate in the normal manner, but the cathode method of taking the output was found to be the best.

The second stage uses a 6SK7, or equivalent, and functions as an isolator. It is needed to isolate the oscillator from the power stages, which would react on the frequency of the oscillator if coupled

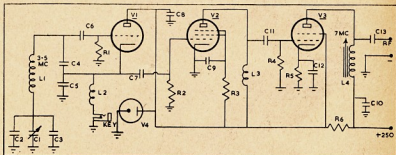
directly to it. Two isolating stages may be used for complete isolation. If desired, by adding another identical 6SK7 stage. The output from such untuned stages is small but lessens the chances of frequency change.

The third stage uses a 6V6G as a doubler, doubling from the fundamental frequency of 3.5 Mc. to 7 Mc. The output is tuned by a perma-tuned coil, which has a diameter of 9/16ths, and was originally a short wave coil. The old windings were removed, and the former wound with 34 turns of 32 gauge enamel, close wound, and so placed that the movable iron slug can be varied from right out, to right through the coil. The resonant point is very broad, and when found adjust to the centre of the band. If you care it can be arranged to have normal tuning with a condenser, by bringing the shaft through the front panel, and reducing the turns on the coil slightly so that the circuit will tune to 7 Mc.

Output of the v.f.o. is fed to the crystal socket if a 7 Mc. crystal is used. If the crystal is 3.5 Mc., it would be better to have the plate of the 6V6G untuned (the same as the isolator stage), and feed to the crystal socket in the normal manner. It is advisable to see that the r.f. chokes are different in both plate circuits, otherwise oscillation may occur.

Voltages for the 6J5 plate, 6SK7 plate and screen, and 6V6 screen, are voltage regulated by a VR150/30, but will work quite well without a regulator, as voltage has very little effect on frequency. The voltage on the screen of the 6SK7 should not exceed 80 volts for best results. The supply voltage to the plate of the 6V6G is 250, and the r.f. output compares favourably with the average crystal.

(Continued on page 7)



C1—100 pF. variable (see text).

C2—100 pF. silver mica.

C3—150 pF.

C4—0.001 uF.

C5—0.001 uF.

C6—0.0001 pF.

C7—0.0001 pF. mica.

C8—0.05 uF. paper.

C9—0.01 uF.

C10—0.1 uF.

C11—0.0001 pF. mica.

C12—0.01 uF. paper.

C13—0.0001 pF. mica.

R1—100,000 ohms, carbon.

R2—50,000

R3—3,000

R4—100,000 " w.w. 10 watts.

R5—400 " w.w.

R6—2,500

R7—10 watts.

V1—6J5 (or 6SJ7 as triode).

V2—6SK7.

V3—6V6G.

V4—VR150/30.

L1—See text.

L2—2.5 mH. R.F.C.

L3—2.5 mH.

L4—See text.

* Terrigal Road, Erina, N.S.W.

REWINDING D.C. RELAYS

BY A. K. HEAD,* VK3AKZ

If you have collected a variety of relays, working on different voltages, then it is rather difficult to find an economic way of energising them. One way is to have a small metal rectifier per relay and provide the various a.c. voltages necessary. This is quite feasible with the present availability of 100 Ma. rectifiers at a few shillings each in disposals.

A more satisfactory way is the re-wind the relays so as to all work on the same voltage. Then one big metal rectifier can supply the lot; and to make the rewinding easy there is a simple rule for calculating the new winding. All you need do is:—

(i) Measure the gauge of wire used in the old winding.

(ii) Mark the depth to which the bobbin is filled by the old winding.

(iii) Rewind the bobbin to the same depth with the new wire (the gauge of which is worked out as described later). No need to count turns, just wind on

wire until the new winding occupies the same volume as the old.

(iv) The gauge of the new wire can be found from the rule: To double the operating voltage rewind with wire three gauges thinner than the old wire; to halve the operating voltage rewind with wire three gauges thicker than the old wire.

Or if you want to change the voltage in some other ratio, then change the wire gauge as in the following table:—

Voltage Ratio	Change in Gauge
1.3	1
1.6	2
2	3
2.5	4
3.2	5
4	6
5	7
6.3	8
8	9
10	10

(v) When a relay has been rewound by this rule, the current it draws will change inversely as the voltage ratio, e.g. if a 24 volt 50 Ma. relay is rewound to operate on 12 volts, then as the

operating voltage has been halved, the new operating current will be double, i.e. 100 Ma.

To illustrate this method, suppose a 24 volt, 480 ohm relay is to be rewound for 12 volt operation. The wire of the old winding is measured and found to be 28 B. & S. Since we want to halve the operating voltage, it must be rewound with wire three gauges thicker, i.e. 25 B. & S. So the old winding is stripped off and the bobbin rewound to the same depth with the new wire. Originally it drew 50 Ma. so with the new winding it will draw 100 Ma.

If you want to change the voltage in a ratio which is not given in the table, then the nearest entry will be good enough, e.g. in rewinding from 18 volts to 6 volts, changing the wire gauge by five will do.

These rules are only true for enamelled wire—so don't try to use them for silk or cotton covered wires. This is because of the larger volume taken up by these insulations. They also only apply strictly when the gauges are measured in B. & S., but for practical purposes they also apply to S.W.G.

* Assistant Technical Editor, 12 Peverill Street, Balwyn, Victoria.

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IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS

APRIL 1949

The accompanying charts have been prepared by the Ionospheric Prediction Service of the Commonwealth Observatory. The first set of the series was published in the November, 1948, issue of this magazine, together with an article explaining the nature of the forecasts and how to use them. Nine of the charts, prefixed by the letter "C" for Canberra, refer to forecasts for the South-Eastern Australian States. The remainder, prefixed by the letter "P" for Perth, are for Western Australia.

These charts refer to the following world zones:—

Zone	Region	Terminal
1	Western Europe	London
2	Mediterranean	Cairo
3	N.-West America	San Francisco
3a	N.-East America	New York
4	Central America	Barbados
5	South Africa	Johannesburg
6	Far East	Manila

The forecasts have actually been prepared for point-to-point circuits between either Canberra or Perth and the overseas terminals mentioned in the above table. It is, however, to be expected that the charts will provide an approximate indication of ionospheric conditions for all Amateur contacts from South-Eastern Australia and from Western Australia to the various world zones. No forecasts are given from Perth to zones Z2 and Z4 for the current month. Chart P-Z2 would be essentially similar to P-Z1 while chart P-Z4 would be unreliable due to auroral activity in high northern latitudes.

USE OF CHARTS

All that is necessary in using the charts is to select a time (G.M.T.) during which a specified Amateur band frequency is below the maximum usable frequency (m.u.f.) of the F region of the ionosphere but above the lowest useful frequency (L.U.F.) for the desired contact. In two cases, zones 1 and 3a, it is necessary to consult both the short-route (s.r.) chart and the following long-route (l.r.) chart.

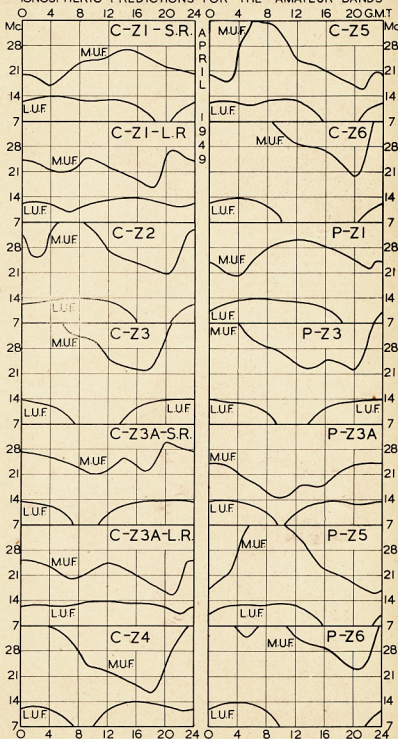
QUIZ

The Prediction Service welcomes comments on the accuracy of its predictions. In particular answers to the following questions on the Canberra-Cairo circuit for April would be useful.

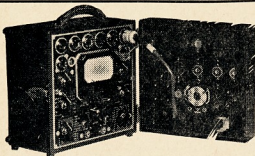
1. Was the 28 Mc. band open consistently during the periods 0400 to 1200 hours and 2200 to 0100 hours G.M.T.?
2. Was the 14 Mc. band open, but noisy, from midnight to noon G.M.T.?
3. Were conditions good on the 14 Mc. band throughout the period 1500 to 2300 hours G.M.T.?

Answers to the Quiz should be sent to the W.I.A. and should, if possible, refer to consistent results obtained on the majority of days in the month.

IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS



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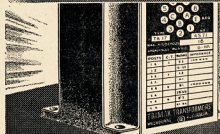
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2	20	200-0-200	200-0-200
3	30	300-0-300	300-0-300
4	40	400-0-400	400-0-400
5	50	500-0-500	500-0-500
6	60	600-0-600	600-0-600
7	70	700-0-700	700-0-700
8	80	800-0-800	800-0-800
9	90	900-0-900	900-0-900
10	100	1000-0-1000	1000-0-1000

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PARALLEL CATHODE MODULATION

Some Light On A Little-Known System

BY GORDON N. HARLEY,* VK4GH

The Modulator here described has aroused very favourable comment from stations contacted and so many requests for detailed information have been received, that it was thought best to present it through the pages of "Amateur Radio."

This method of modulation is of particular interest to the c.w. man who wants to use phone occasionally, for no expensive equipment is needed and most of the parts will be found lying idle in any Ham shack. At the same time it is worthy of permanent installation in a purely phone transmitter, for excellent quality is obtainable with ample percentage of modulation.

CIRCUIT The system gets its name from the fact that the modulator tube and the r.f. tube are in parallel across the modulation choke. It is, in effect, an application of the familiar "cathode follower" system of coupling, and possesses two outstanding advantages. Firstly, because the cathode impedances of the two tubes are almost the same, no matching transformer is needed; all that is required is a good audio choke capable of carrying the sum of the plate currents.

Secondly, because the cathode coupled modulator tube operates with approximately 100 per cent. degenerative feedback, distortion in this stage is greatly reduced. Because of this degenerative feedback the grid swing needed on the modulator tube is quite high, and an extra stage of voltage amplification may be needed. This slight disadvantage is more than offset, however, as the cost of a voltage amplifier is well below that of a 25 to 50 watt modulator.

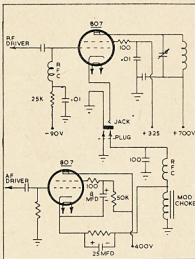
There is a further advantage—the modulator may be used with any of several final stages, simply by plugging it into the keying jack in the cathode circuit.

OPERATING DATA For greatest efficiency the r.f. stage should be run at the maximum plate voltage set down for Class C telegraphy. Grid bias, which should be at least three times cut-off for the plate voltage used, may be obtained from batteries, grid-leak, cathode resistor, or any combination of these. The total bias must be by-passed for audio; here the by-pass condenser is 0.01 μ F, mica type.

In deciding the safe plate input for a single tube, take the maximum rating given for plate dissipation for any class of service (usually class-B, r.f. amplifier or grid modulated conditions) and multiply by 2.2; permissible plate current is then easily calculated. This input assumes correct adjustment throughout the r.f. final stage; preliminary tuning should **always** be done at reduced plate voltage.

R.F. excitation power should be at least 5 per cent. of the final plate input. The power supply of the r.f. driver **must** be well filtered; failure to achieve this result will cause grid modulation of the final at the ripple frequency.

Audio power required is 10 per cent. of the r.f. final input. Here an 807 is used, as shown in the diagram, but any



triode, tetrode or pentode (or several in parallel) may be used, provided the power output is sufficient. If a tetrode or pentode is used, the 8 μ F. by-pass condenser from screen direct to cathode (NOT earth) must be included.

In tuning it will be found that comparatively heavy antenna loading is needed, or the positive modulation capability of the r.f. stage will not be sufficient when excitation is increased until the tube draws calculated plate current. If the antenna loading is too heavy for a given plate current, the efficiency will suffer with consequent overheating. Antenna coupling should be increased until 100 per cent. modulation capability is obtained with normal plate current, but not beyond this point. Grid current will vary according to the type of tube used as r.f. final. Modulation capability may be improved in some cases by reducing grid drive.

PRACTICAL APPLICATION

The maximum plate dissipation of the 807 is given as 30 watts, which multiplied by 2.2 gives 66 watts as the permissible plate input; maximum plate voltage for Class-C telegraphy is shown as 750 volts. However, it was decided to keep below these limits, and the following are operating voltages and currents as used here.

R.F. Final—Plate volts 700, plate

current 85 Ma., screen volts 320, control grid volts —175, grid current 2.5 Ma. The bias is made up of 62.5 volts from grid leak, 90 volts from batteries and 22.5 volts from drop across the modulation choke. The screen voltage is a little high, but no overheating occurs.

Modulator—Plate volts 400, plate current 32 Ma., screen volts 225, control grid volts —22.5 (drop across choke).

As used here the cathode resistor for the modulator is not necessary, as the drop across the choke holds the plate current down. Should greater modulation bias be found necessary, a resistor of appropriate value may be inserted across to make up the difference between the drop across the choke and the required voltage.

The r.f. choke and by-pass condenser in the "hot" lead from the modulator were found necessary here because quite a lot of r.f. was coming in via this lead.

Should any reader have queries, the Writer will do his best to assist on receipt of a stamped envelope.

A HIGH STABILITY V.F.O.

(Continued from page 3)

If you have taken every care with the building of this unit, you should have no trouble from instability, and after it is adjusted, allow to run for a period against some crystal oscillator of known stability, adding positive or negative co-efficient condensers across C1, C2, C3, if necessary, and finally check the tone of the note compared to the crystal. If break-in keying is preferred, this unit will follow very nicely. Insert the key in the cathode lead of the oscillator, from the bottom of L2 to earth. The final step is to resonate the 6V6G plate tank.

This V.F.O. has been in use on 14 Mc since November, 1948, and over 200 DX contacts have been made, and except for the period when the oscillator tube was faulty, every report has been T9 and T9X; to sum up, the Writer is more than pleased with the performance of the unit.

Now for a word of warning for newcomers to v.f.o. operation—

1. Make sure you are always in the band.
2. When you have finished a DX QSO, shift your frequency if you have called that station.
3. Never wander over every Kc. of the band if you are not getting out unless you are sure you are being QRM'd—it may be conditions.
4. Never put the whole transmitter on the air when "v.f.o.-ing" near the DX station's frequency. Use a separate power supply for the v.f.o., and adjust the v.f.o. to frequency early.

*208 John St., Maryborough, Qld.

Crystal Controlled Transmitter For 144 Mc.

BY J. COULTER,* VK5JD

This transmitter should find favor with those interested in v.h.f. and who failed to draw an SCR522 from the disposals "lucky dip."

With the exception of the 832, all parts are readily available and reasonably cheap. Quite good results may be had without the 832. Substitute a pair of RL7s and it is still possible to put a very respectable signal on the band.

Very little information regarding the RL7 was available. The circuit values specified are the result of "cut and try." It is possible that further experiment would result in greater efficiency. However, neither tube is working above the recommended plate dissipation rating.

Inspection of the circuit diagram will show that it is quite a straight forward four stage transmitter but careful construction is necessary if optimum results are to be obtained.

The chassis measurements are 17" x 6" x 6". Neither knobs or dials are used—all tuning being done with a screw driver, to ensure a compact layout.

The crystal oscillator is located on the left hand end of the chassis, with

* 49 Farnham Rd., Ashford, South Aus.

both cathode and plate coils mounted below. Whilst the circuit diagram shows the suppressor at a positive potential, this may not be necessary. (This arrangement is the remains of early efforts to take off the sixth harmonic and delete one stage.) Tuning is quite normal and is adequately covered in the Handbook. Crystals used are in the 8 Mc. to 8.2 Mc. region. The plate circuit of the 6AC7 oscillator being tuned to the third harmonic of the crystal.

The RL7 tripler stage follows, being placed as closely as possible to the oscillator plate tank as "lead length," or rather the lack of it, becomes important at these frequencies. No difficulties should be experienced with this stage.

The doubler stage, which also employs the RL7, gave the most trouble. The coupling between stages is most critical. Optimum spacing of grid circuit and previous plate appears to be about $\frac{1}{4}$ ", and the grid current will be 6 Ma. The Eddystone r.f. choke is also critical. The actual inductance is 5.32 uH. and they are readily available and should be used if best performance is to be obtained. Plate tank and condenser are mounted above the chassis but this is mainly for convenience in further experiments. There should be no reason against

mounting below as the plate circuit is at twice the frequency of the grid circuit.

The p.a. is mounted on a vertical shield which, together with the recommended socket, provide adequate isolation between the plate and grid circuits. Should another type of socket be used, it will be necessary to space the socket from the shield. The spacing must allow the tube to protrude through the shield to the level of the tube's internal shield to obtain the same degree of circuit isolation. This appears to be the only constructional precaution.

Having completed the wiring of the transmitter, filament voltage should be applied to all stages and checked. Commencing with the oscillator, apply h.t. and tune, stage by stage to the grid of the p.a. With the p.a. grid drawing 3 or more milliamps, apply reduced plate and screen voltage to the 832. If the grid current drops, the shielding is insufficient or the stage needs neutralising. The latter is easily accomplished with two pieces of wire, fed through the shield from grids to opposite plates. The wires may be cut or spaced until neutralisation is effected. With the tube

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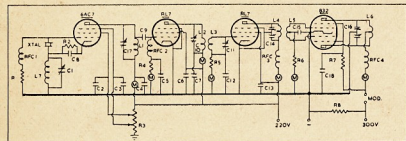
stabilised, the plate input may be run up to the rated value of the 832 or 832A.

Whilst the transmitter is mainly used for telephony, it has been keyed for c.w., quite satisfactorily. Screen keying of the two RL7s was the method used, with a small battery to bias the 832 (45 volts).

Coupling to the antenna will vary with the type of feed line in use. It is recommended that the coupling be tuned as outlined in "QST," August 1947. This is far superior to the method usually adopted—"poke a piece of flex in until she draws."

Voltsages and currents of the various stages are:—

	Volts	Ma.
Oscillator plate	220	10
Tripler plate	220	—
Tripler grid	—	4
Doubler plate	220	24
Doubler grid	—	6
P.A. plate	300	42
P.A. grid	—	2.5



- C1—75 pF. variable.
 C2, C3, C4, C5—0.01 uF.
 C6, C7—0.0009 uF.
 C8—0.001 uF.
 C9—50 pF.
 C10, C11—25 pF. variable.
 C12, C13, C15—500 pF.
 C14—25/25 pF. split stator.
 C16—9/9 pF. split stator.
 C17—40 pF.
 C18—See text.
 R1—50,000 ohms.
 R2—200 ohms.
 R3, R8—20,000 ohms V.D.
 R4, R6—20,000 pF.
 R5—16,000 ohms.
 R7—20,000 ohms, 2W.
 RFC1, RFC2, RFC3—Four pie, R.C.S.
 RFC3, RFC4—Eddystone v.h.f. type.

Note.—RL7 screens are operated at the same potential as the plate. In the final set-up the oscillator and tripler plate currents are not read. They are adjusted to manufacturer's rating and the meter removed. Grid current of the following stage is checked to indicate resonance.

The screen by-pass C18, shown in the diagram, is not always necessary at 144 Mc. A small screen by-pass is built into the 832 to obtain symmetry and minimum of lead inductance, and will be adequate in some cases (e.g. 522 transmitter). The R.C.A. socket UT107 has screen and filament by-passes as an integral part of the socket, or if this socket is not available, an ordinary socket with a by-pass of 500 pF., wired directly across the socket pins with the shortest possible lead length, would be satisfactory.

VK5GF has commissioned a similar transmitter, but is using EF50s in place of the RL7s with equally good results. The coil data given would probably vary slightly with the change of tubes, however.

- L1—10 turns 14 g. bare copper, 1/2" diam., 1 1/2" long.
 L2, L3—3 turns 14 g. bare copper, 1/2" diam., 1/2" long.
 L4—Hair-pin, 3" long, 1/2" wide.
 L5—Hair-pin, 3" long, spacing adjusted to obtain required grid Ma.
 L6—4 turns 10 g. copper, 1/2" diam., 1 1/2" long.
 L7—11 turns 18 gauge enamel, 1/2" diam.
 RL7 Socket Connection—
 1, 7—Earthed to one side of socket mounting bolt.
 2—Plate.
 3—Screen by-passed to 4 and 5.
 4, 5—Earthed to other mounting bolt.
 6—Grid.
 9—Filament.
 Key-way in line with pin No. 1.
 † For further details on RL7 refer to "Amateur Radio," November, 1946, page 8.

HARMONIC REDUCTION WITH STUBS

Hams who are having trouble with harmonic radiation sometimes can make a substantial reduction in the amplitude of even-harmonic radiation by connecting the open end of a shorted quarter-wave stub to the antenna feeders or transmission line.

The function of such a stub is to present a short-circuit to all even-multiple harmonics of the transmitted frequency, while presenting a high impedance to the fundamental. Thus the stub causes no detuning or power loss, but eliminates the even-multiple harmonics.

The stub may be connected at any point along tuned or untuned transmission lines of either the parallel wire

or the co-axial type. A "T" connector will be necessary for tapping into co-axial lines.

If the transmission line is being used for more than one frequency band, the stub line may be made long enough for the lowest-frequency band used, and a shorting bar may be used to set the stub length to the proper position for each band. Continuous protection from lightning and static charges may be obtained by grounding the shorted end of the stub, and it will not be necessary to remove this ground during operation. —"QST," December, 1948.

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1949 Trans - Tasman Contest

RULES

1. The Contest will commence at 0400 hours G.M.T. on Saturday, 4th June, and continue until 0200 hours G.M.T. on Sunday, 5th June.
2. The Contest will be divided into three sections, namely, Phone, C.W. and Open. The Open Section will be a combination of both Phone and C.W. operation. A contestant may enter for each or all sections provided a separate log is submitted for each section entered.
3. Operation may be on any of the licensed Amateur bands, but transmissions will be in accordance with the Regulations existing in each country.
4. A six number serial group must be exchanged before any points can be claimed. The first three numbers, chosen by the entrant station, shall be retained throughout the Contest. The second three numbers will commence with 001 for the station's first contact, 002 for the second contact and so on.

5. A station may be operated by more than one operator, provided a separate log is entered by each operator.

6. SCORING.—Three points can be claimed for each complete exchange of numbers. The total points will be multiplied by the number of ZL districts worked on each band in the case of VK stations, and the total number of VK districts worked on each band in the case of ZL stations. For the purpose of this contest, the prefixes VK2, VK3, VK4 etc. will constitute districts, except VK5s in Darwin which will not constitute a separate district. ZL prefixes will likewise count as multipliers for VKs.

7. LOGS.—A log showing, in the following order: the Date, Time (G.M.T.), Station Worked, Band Used, Number Sent, Number Received, and Points Claimed and a Summary at the end must be forwarded to Box 2611W, G.P.O., Melbourne, to reach the Contest

Committee not later than the 4th July, 1949. The envelope should be endorsed "Trans-Tasman." The log must be signed by the operator and include a statement that he has complied with the Regulation of his country. The input to the final stage of the transmitter will also be shown.

8. AWARDS.—Attractive Certificates will be awarded in each Section to the outright winners in Australia and New Zealand, and also to the winners of each Section in each District of Australia and New Zealand. The outright winners will not be eligible for the District awards. Further District certificates in each Section may be awarded at the discretion of the Contest Committee.

9. Notwithstanding anything contained in the Rules, the Contest Committee of the W.I.A. shall have the power of final decision in all matters of dispute or breaches of these Rules.

Results of 1949 National Field Day Contest

It is pleasing to note that this year greater interest was shown in this Contest and the comments of those who went out with portable equipment augers well for the 1950 Contest. However, still more interest could be taken, for it is an effective way of trying out that portable gear that may be required for some sudden emergency. Congratulations to the Section winners this year, who in most cases did a good job under somewhat trying conditions.

The C.W. Section winner, VK3UM/3UH, did the trick for the second year in succession and ran up the best score of the Contest. They journeyed to the same location again. One Tree Hill in the Dandenongs and equipment consisted of a Type 3 Mark II, with 15 watts on 7 and 14 Mc. and a 6J5-6L6 rig with 30 watts on 28 Mc. Unfortunately 28 Mc. was not open and no contacts were made. The Eddystone S640 no doubt, contributed largely to their good score, as well as the long wire and 3 element rotary for 28 Mc. Continents worked were Oceania, North America, Europe and Africa on 7 Mc., and Oceania, Europe and Asia on 14 Mc.

The Phone winner, after a difficult start in a gale, ran up a very good score with only 7 watts into a four stage rig ending in a 1625. This party VK7SK/SJ, used a Phillips' bandswitched receiver and a 120 feet per leg, vee beam which helped them to contact the greatest number of stations. They worked Oceania, North America and Asia on 14 Mc.

The Open winner, party VK4HR/RT

(old hands on v.h.f. field days), went properly prepared complete with three stage transmitter using an 832 with 18 watts c.w. and 14 watts phone on 14-28-50 Mc., and a BC459 with 30 watts on 7 Mc. The receivers were a BC348 on 7-14 Mc., 10 valve home-built on 14-28 Mc., and a modified SCR522 on 50 Mc. Antennae consisted of dipoles on 7 and 14 Mc., folded dipole on 28 and two element rotary on 50 Mc. They worked Oceania on 7 Mc.; Oceania, Asia, Africa, and North America on 14 Mc.; and North America on 28 Mc.

There is some talk among the N.F.D. boys of hiring caravans next year! It would appear they may need them to keep up with Tibby. To the other entrants, we say "Thank You" for forwarding the logs.

SCORES

C.W. Section

VK3UM/3UH	.....	2	28	7	269	Pts.
VK4HR/4RT	.....	3	20	6	224	"
VK2PA/2SH/2ASF	.....	3	21	6	219	"
VK4JA/4RC/4EL	.....	2	20	5	178	"
VK3ADB/3YS	.....	3	13	4	133	"

Phone Section

VK7SK/TSJ	.....	1	53	3	224	Pts.
VK3ADB/3YS	.....	3	31	5	185	"
VK3AN/3VC	.....	3	23	4	157	"
VK3LN/3TF	.....	2	13	3	103	"
VK4HR/4RT	.....	3	7	2	77	"

Open Section

VK4HR/4RT	.....	4	27	6	251	Pts.
VK2PA/2SH/2ASF	.....	3	27	6	243	"
VK3ADB/3YS	.....	3	43	5	218	"

Figures above represent in the following order: Bands worked, contacts, continents worked, and total score.

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FEDERAL, QSL and DIVISIONAL NOTES

Federal President.—W. R. Gronow, VK3WG; Federal Secretary.—W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary.—Dick Dove (VK2RP), Box 1734, G.P.O., Sydney.

Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor: H. F. Trehanne, VK2BM, 5 Walmeica St., Burwood.

Zone Correspondents.—North Coast and Tablelands: P. A. H. Alexander, VK2PA, Hill St., Port Macquarie; Newcastle: E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; Coalfields and Lakes: H. Hawkins, VK2YL, 27 Comfort Ave., Gosport; Western: G. J. Russell, VK2QJ, 144 Bogan St., Nyming; South Coast and Tablelands: R. H. Rayner, VK2DO, 42 Pettit St., Yass; Southern: E. N. Arnold, VK2OI, 673 Forrest Hill Ave., Albury; Western Suburbs: A. C. Pearce, VK2AHB, 49 Harrabrook Ave., Five Docks; Eastern Suburbs: H. Kerr, VK2AX, No. 4, 144 Hewitt St., Bronte; North Sydney: L. D. Cuffe, VK2AM, 779 Military Rd., Mosman; St. George: J. A. Ackerman, VK2ALG, 32 Park Rd., Carlton South; Sydney: V. H. Wilson, VK2XW, Cr. Wilson St., and Marine Pde., Maroubra.

VICTORIA

Secretary.—C. C. Quin, VK3WO, Administrative Secretary.—Mrs. D. Cross, Law Court Chambers, 191 Queen St., Melbourne, C.T.

Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zone Correspondents.—North Western: R. Mann, VK3YV, 12 Skene St., Stawell; South Western: B. Squire, VK3BJ, 17a Raleigh Street, North Ballarat; North Eastern: J. Miller, VK3ABG, "Erinvale" Avenue; Far North-Western Zone: Harry Dobbyn, VK3MF, 42 Walnut Ave., Mildura; Eastern Zone: J. D. Chilver, VK3DI, 20 Smith St., Leongatha.

FEDERAL

DX C.C. NOTES

By the time this appears in print, most of the DX C.C. stickers endorsing additional confirmations of 20 countries, will have been issued to those entitled to them.

PHONE

Zone	Countries
VK3JD (26)	33 121
VK3RU (27)	109
VK3BEZ (28)	101
VK3KW (34)	101

O.W.

Zone	Countries
VK3CN (3)	40 136
VK3YV (13)	39 127
VK3BEZ (14)	39 127
VK3EK (10)	39 123
VK3ED (7)	40 116
VK3AD (24)	39 116
VK3AD (20)	38 113
VK3QL (13)	40 113
VK3HR (32)	38 106
VK3EB (35)	104

OPEN

Zone	Countries
VK3DI (3)	40 100
VK3BEZ (5)	39 153
VK3EK (1)	38 186
VK3HG (4)	38 186
VK3YV (11)	37 185
VK3JE (18)	39 133
VK3MO (6)	39 132
VK3ER (9)	38 150
VK3KW (19)	39 120
VK3EL (16)	39 116

NEW OPEN MEMBERS

19 VK3HE	103
10 VK3YV	104
31 VK3OP	108
82 VK3AHM	100

COUNTRIES LIST

Until further notice, the only official prefixes issued in Germany are as follows:

- DL instead of D2 (British Zone)
- DLA instead of D4 (American Zone)
- DLB instead of D6 (French Zone)

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7195 Kc. and 2000 hours EST, 50.4 Mc. No frequency checks available from VK2WI. Intra-State working frequency, 7175 Kc.

VK3WI.—Sundays, 1130 hours EST 7195 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0930 hours EST simultaneously on 3750 Kc., 7190 Kc., 14,942 Kc., 52.4 Mc. and 144.38 Mc. Frequency checks are given two nightly weekly, and the times are announced during Sunday broadcasts. 7010 Kc. channel is used from 1000 to 1030 hours each Sunday as VK4 query service to 4WI.

VK5WI.—Sundays, 1000 hours SAST on 7195 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK6WI.—Sat. 2 p.m. Sun. 9.30 a.m. W.A.S.T. between 700 Kc. and 720 Kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 0630 hours EST on 7174 Kc. No frequency checks are available.

SILENT KEY

VK2GR

During February New South Wales lost one of its old timers in the passing of Alex Robinson VK2GR. Alex had been sick for many months, but despite this fact, was a very active 20 metre phone man until his untimely end. He will be best remembered for the assistance he gave to the many beginners in the Western Suburbs of Sydney and many Amateurs today owe their "checkers" to his efforts. A member of the Gladstone Radio Club, his main diversion was to contact his G friends and bring back memories of his youth in England.

Things are still very confused regarding officially licensed stations and as far as is known DA and DX calls are being used by ex-D stations and VKs. It is proposed to issue the other DL prefixes at a later date to these ex-D names. Substitute YK for ARI prefix for Syria.

SWISS CONFERENCE

The following are extracts from a letter from Mr. J. Dobbyn of the P.M.G.'s Department, who is the Australian representative on the Frequency Board at present sitting at Geneva, Switzerland: "I attended the 29th Anniversary of the Swiss Section of the I.A.R.U. which was held at Fribourg on Sunday, 30th January. At the invitation of the International Relations Officer of the Union Suisse des Amateurs (U.S.A.), I represented both the P.M.G.'s Department and the W.I.A. as a member of the original Council of members. It is interesting to find that five continents were represented at the meeting, and after dinner at the Hotel Suisse, VKs were called on for a talk on Amateurs in Australia, which was very well received and great interest was shown in the W.I.A.'s history and development. I was asked to convey the best wishes of the U.S.A.A. to the President and members of the W.I.A."

TRANS-ASIAN CONTEST

Elsewhere in this issue appears the rules of the 1949 Trans-Asian Contest, a contest held to pro-

QUEENSLAND

Secretary.—W. L. Stevens, VK4TB, Box 638J, G.P.O., Brisbane.

Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.

Divisional Sub-Editor: F. H. Shannon, VK4SN, Minden, via Rosewood.

SOUTH AUSTRALIA

Secretary.—E. A. Barbur, VK5MD, Box 1234K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.

Meeting Place.—Paddy House, Cnr. St. George's Ter. and King St., Perth.

Meeting Night.—Watch the Monthly Bulletin.

Divisional Sub-Editor.—VK6WV, Mr. D. Couch, Mary Street, Watermans Bay, W. Australia.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—Capt. E. J. Cruise, VK7EJ, Angelsea Barracks, Hobart.

Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

more closer friendship with our near neighbours, the ZLs. This Contest has been put back to the first week in June so that we do not follow too closely on other International Contests. It is only a short contest and does not require endurance or a constitution of iron! We enjoy all VKs that take an interest in Contests to enter and make it a huge success this year for yourselves and your brother Amateurs in ZL.

FEDERAL CONFERENCE

The Annual Federal Conference is being held in the Institute Rooms at 191 Queen Street, Melbourne, commencing at 1400 hours Good Friday, 15th April (week of 1400 hours). It will conclude at midday Easter Monday, 18th April (week of 1400 hours). Any local Amateurs or Interstate visitors are cordially invited to attend any of the sessions during this period, as they will have an opportunity to hear a few of the problems involved in the administration of our Institute.

W.A.S. RULES

We regret that we are at present unable to publish the Rules of the W.A.S. Award due to delays occasioned within the Divisions in preparing for the Federal Conference. The rules, as approved by Federal Council, will be published as soon as possible. Credit will be strictly given in order of the date of working W.A.S. so you don't feel you will be not given due recognition of your achievements.

F.I.A.T.S. CHARTS

As a result of a motion put by Federal Council to the Divisional Council has been decided to continue the publication of these charts. How long they continue is up to you as an individual—please let the Federal Council know your view or suggested improvements. Dr. Green would be deeply appreciative to receive your comments also, so please send them in.

AMATEUR CALL SIGNS

The following list will be the first supplementary list of the new Call Signs. It is available, December and January amendment lists will be included in the new publication, which should be sent to amend with the blank interleave. The P.M.G. are to be consulted on making the facility available to enable members to keep their books up-to-date.

Amateur Radio; April, 1949

New Issues—

VKIADS—R. W. Sterrett, National Antarctic Expedition, Macquarie Island.
 1FE—A. R. BURTON, National Antarctic Expedition, Heard Island.
 1VU—R. G. F. Gatt, National Antarctic Expedition, Heard Island.
 VK2AFD—D. J. Fisher, 156 Albany Rd., Petersham.
 2AJR—J. C. Turner, 26 Roberts St., Jannali.
 2AJT—K. F. Pulling, Post Office, Coffe Harbour.
 2AKJ—S. S. Kemp, 34 Irvine Cres., Ryde.
 2AMA—O. L. Weller, 31a Salisbury Rd., Kensington.
 2AMJ—Miss J. L. Jirs, 87 Second Ave., South Lidcombe.
 2ARY—C. H. Archbold, Chittaway Point, via Wyong.
 2ASR—S. W. Graves, 109 Clovelly Rd., Randwick.
 2ATM—T. W. Marks, 11 Woods Street, Manly.
 2AWJ—W. J. M. Baillo, 85 Harrow Rd., Belconn.
 2AWP—P. F. Long, 26 Parkum St., Moore Park.
 2AWZ—D. Andrews, 61 Cox's Rd., North Ryde.
 2AYC—Portable of VK2YC.
 VK3ACH—C. W. Smyth, 680 Bell St., W. Preston.
 3ACY—R. C. Fisher, Elwanda Ave., Mildura.
 3AND—A. M. Dobie, 206 Pouth Rd., Hughesdale.
 3AVX—T. F. Webb, 2 Eliza St., Black Rock.
 3AWC—W. J. Currie, 12 Stevedore St., Williamstown.
 3MG—G. W. Jane, 20 Coolgardie Ave., East Melbourne.
 VK4BP—A. L. Berry-Porter, Grant St., Atherton.
 4FP—J. F. Pickles, 61 Liverpool St., Clayfield.
 4GA—C. E. Goodall, Cook St., Atherton.
 4JH—J. P. Hazen, 28 Macrossan St., South Townsville.
 4NF—N. P. Berkman, c/o Mrs. Sandall, River Park, Fairfield.
 4PO—P. E. Oliveri, Jacon, via Ipswich.
 VK5ER—E. J. Riscly, 45 Edward St., Brighton.
 5IP—L. J. Plesse, 55 Halsbury Ave., Kingswood, Enley.
 5LH—R. J. Strachan, Hospital Rd., Port Augusta.
 5HD—R. D. Robertson, 21 North St., Frewville.
 5RY—R. Burgess, c/o Salisbury Hotel, Salisbury.

VK6KU—R. H. Campbell, 16 Doonan Rd., Claremont.
 VK7KA—K. F. Millin, Cr. Minallo Ave. and Lockwood St., West Hobart.
 VK9RO—R. M. Ellison, Papan Missionary School, Bantama, via Port Moresby, P.T.
Alterations—
 VK2ABS—J. W. Howes, 61 Outlay Park Ave., Outlay.
 2ABV—J. L. Scotland, 28 Figtree Ave., Randwick.
 2ACM—M. Cowan, 25 Dillon St., Paddington.
 2ADB—D. C. Caldwell, 1 Fletcher St., Strathfield.
 2ADG—E. J. Dark, 109 Arbutus St., Canley Vale.
 2ADI—J. B. Williams, 82 Auckland St., Bega.
 2ADN—E. G. Pugh, 308 Morrison Rd., Ryde.
 2AIL—K. L. Finney, Flat 6, "Connell Court," Connell's Point Rd., Sth. Hurstville.
 2AMA—O. L. Weller, 31a Salisbury Rd., Kensington.
 2AMZ—H. S. Young, Kardella Cres., Narwee.
 2AOF—H. C. Freeman, 5 Canterton St., Hurstville.
 2AWW—W. White, 41 Cahill St., Beverly Hills.
 2EA—J. L. Martin, Lower Kangaroo Creek, via South Grafton.
 2ELC—N. Glascock, 95 Beaconsfield Rd., Chatewood.
 2OU—A. S. Littlejohn, 3 Emmerick St., Leichhardt.
 2QL—F. T. Hine, 18 Bridge Rd., Homebush.
 2QM—S. C. Broadbent, Cr. Jamieson & Granger Ave., North Curl Curl.
 2RO—A. R. Gray, Lot 65, Jean St., Chullora.
 2SA—W. E. Salmon, 100 Flora St., Kirrawee.
 2ST—W. C. Hall, Oriental Hotel, Cook's Hill.
 2TG—A. T. Goldie, Public School, Munnamung, via Casino.
 2UT—J. T. Todd, Alan St., Rydalmore.
 2VN—M. H. Meyers, 20 Karindia Rd., Clifton Gardens, Mosman.
 VK3AAW—A. W. H. Wright, Air and Ground Radio School, R.A.A.F., Ballarat.
 3AC—H. G. Chandler, 6 Carrington St., Pascoe Vale.
 3ADR—A. R. Roy, 33 Pine Ave., Elwood.
 3AFL—P. C. Lambert, 281 Main St., Balmaindale.

3AFW—R. C. Treson, 36 Yaldwin St., Kyneton.
 3ARC—G. J. Griffiths, 56 Holmes Rd., Moonee Ponds.
 3AMK—J. H. Hannam, "Amfield," Bemborough Ave., Balwyn.
 3ANL—E. L. Blackmore, 240 Auburn Road, Auburn.
 3ARY—R. J. Birks, 708 Main St., Ballarat.
 3AWM—W. E. Moffatt, 2 Marcora St., East Malvern.
 3CW—K. J. Millbourn, 5a Melville St., Hawthorn.
 3DX—D. Newton, O'Shannessy St., Nunawading.
 3DW—J. M. Farrer, Deep Lea, via Stawell.
 3DW—D. W. Tacey, c/o Woodend Theatre, Woodend.
 3IV—E. K. Ridgway, 44 Inkerman St., Ballarat.
 3JX—J. S. Sydow, 23 Fobery Ave., Caulfield North.
 3KK—E. T. J. Kerby, 17 Bayview Ave., Auburn.
 3KG—G. T. Benwell, 33 Draper St., Ormond.
 3OE—G. A. Oxley, 392 Riversdale Rd., Surrey Hills.
 3PB—P. C. Bennett, 58 Shady Grove, Nunawading.
 3QK—H. Jenkins, Churchill Island, via Newhaven.
 3QR—R. L. White, c/o Rev. White, "Paralia," Esplanade, Dromana.
 3PW—H. P. Webber, 37 Lacorne Cres., Alphington.
 3RO—J. H. Jones, 36 Harnett St., Box Hill.
 3ST—J. L. Coghlan, 438 Dorcas St., South Melbourne.
 3WP—P. V. Inglis, Jeffrey St., Bentleigh.
 3WS—P. G. Scown, 9 Kinane St., Brighton Beach.
 3XF—L. R. McIntyre, 62 Chetwynd St., West Melbourne.
 3YG—G. E. Smith, 10 Hornby St., East Brighton.
 3YX—L. R. Saylor, c/o J. Steffen, The Boulevard, Maryborough.
 3ZY—W. F. Borgess, 3 Curzon St., Ivanhoe.
 VK4I—A. P. Kearney, 602 Kent St., Maryborough.
 4CF—G. G. Cairns, Landsowne Ter., Newmarket, Brisbane.
 4FL—J. P. Ball, King St., Box 33, Nth. Mackay.
 4PL—L. L. Silver, "Lawbell," Junction Rd., Morningside.



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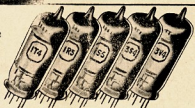
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There are VK stations in Antarctica. Sorry for the grouchy OMs, but quite a number here in VK4 consider the latest mess a bit over the fence.

Bundaberg Zone (4BU).—The Annual General Meeting of the Bundaberg and District Radio Society was held in the Club Rooms on 22nd Feb. The election of new officers for the next 12 months resulted in President, 4BU; Vice-President, 4CW; Secretary and QSL Officer, 4HE; Treasurer, 4UK; Zone Manager and Publicity Officer, 4BJ. The President gave a very inspiring address on the Society's activities over the last twelve months. It was decided to move to new Club Rooms in Bourong St. It is expected that 4BU will be on the air again very soon. Club meets every Tuesday night.

QUEENSLAND QSL BUREAU

Outward.—R. Campbell (4RC), 30 Prospect Terrace, Kelvin Grove, Brisbane.

Inward.—E. Lake (4EL), Old Cleveland Road, Camp Hill, Brisbane.

4HE is erecting a new 10 metre antenna and is now building a new shack with separate workshop. 4FG is re-building r.f. channel, has a nice v.f.o. incorporating xtal calibrator. 4CW is re-building and expects to move to a new QTH where he will try out some f.b. gear bought from G. land. 4XJ has moved to Gympie, and before this reaches print, will be a married man. Congrats Les! 4RZ playing with 28 Mc. receiver, doing a bit on 7 and 14 Mc.

Gympie Zone (4HZ).—4CR QRL with gold fox-sucking and appears on 7 Mc. occasionally. 4XN now erecting a 10 metre beam on the chimney. 4XR has fixed 20 metre beam on South America. 4KT is a new Ham in Gympie, ex-4JR of Papua. 4HZ has at last moved into his new house and hopes to do big things with the good old 50 feet aerial.

South West Zone (4ER).—Still no sign of 4UX's new beam. 4RZ believed to be on holidays. 4GG building 20 and 10 metre converters. 4CG now one of the regulars in the Sunday morning hook-up.

4TY is believed to have up a good score in the B.E.R.U. Contest. 4ER and 4LD still keeping Laidlaw on the map.

Mackay Zone (4KW).—4FH still working South Americans. John uses fixed beams, one on North America and the other on the South. 4KW holidaying in VK2.

No news this month from the Townsville, Cairns and Ingham zones, managers are requested to contact the writer. The Country Representative would like to hear from members in Rockhampton and district with a view to forming a zone in that area. In conclusion we again appeal to members for articles suitable for publication in "Amateur Radio."

SOUTH AUSTRALIA

The monthly general meeting was held once again at 17 Waymouth street, and a very representative gathering were present. The guest speaker was Mr. Fernar, and his subject "Overseas Impressions." Mr. Fernar did a particularly fine job, and his inherent sense of humour did much to entertain his listeners. He gave an interesting description of his air trip from Australia to England and topped it off with his own impressions of television. The number of questions asked of him at the conclusion of his talk was a sure indication of how absorbing it had been, and a vote of thanks proposed by Mr. E. Barbour (5MD) was received with the acclamation it deserved. This type of lecture is always welcome, as it breaks away from Amateur Radio, which is all to the good at times.

Among the visitors were Messrs. J. Trombath, G. Read, R. Burton, and T. Martyn. Quite a contingent of VK3 boys bobbed up out of the blue in R. Cunningham's (5ML) Lord. 4RZ did not have not less L. Taylor 3VQ. Mr. Cunningham addressed the meeting on several points of interest, such as the magazine, and was bombarded with questions at his conclusion. It speaks volumes for his sense and ability that he was able to satisfy all of his questioners, as one or two of the questions were decidedly controversial.

The result of the election ballot for Council Members was announced toward the close of the meeting and turned out to be "too tight," as all of the old Council Members were voted back into office, much to the surprise of the said Council, if not to the meeting. Apparently the Council has the support of most members despite the "heifer dust" floating around before the voting day, such as "the S.A. Division is run by a clique" and "we want live wires on the Council." I would liked to have seen a v.h.f. representative on the Council, but as they nominated three candidates, all of which did to "split their votes" and defeated themselves. This was surprising to me, as that canny campaign leader Jack Coulter (5JD) should have been a wake up to that one. Anyway it is all over now, and the new, or old Council (whichever you like to call it) will continue to carry on doing what it thinks is best for the majority, and if any of the minority wants to put on a back, well there is always the floor of a general meeting to voice a protest. Just in passing, there was one or two new voices heard with proposals and counter-proposals at the meeting, which is all to the good. Keep it up fellows. The names of the Council for 1949 are: Messrs. (in no special order) Hal Austin (5AW), Edward Barbour (5MD), Frank Wreford (5DW), Joe McAllister, Tom Laidlaw (5TL), George Ramsay (5GD), Gordon Bowen (5XU), and that athletic looking "be-man" Warwick W. Parsons (5PS, the W stands for work).

I noticed Norm Colman sitting at the cash receiving table at the meeting with the Treasurer Gordon Bowen (5XU) and judging by the strained look on Norm's face he was having trouble in balancing, but Gordon seemed satisfied so all must have been well. If I had only thought of it I could have helped the Treasurer and might have made each of us say "myself an electric clock!"

Bill Baker forwards his sub from Sydney, but still under the call of 5BQ, so apparently he will be back. Was wondering where you were Bill, nice to have heard from you. My spies tell me that Ross Kelly and Max Farmer (5LW and 5GF) are doing

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Portable stations were at Mangrove Mountain, Mt. Kuringgai and Kuringgai, 2AMP, 2MB and Mt. Attwood operated independently from Bringley, 20 miles west of Sydney. The Gladenville Club are holding another day's outing on 8th May on 144 Mc. and the 32L and 37H will be carrying portable stations will be carried out. The enthusiasm of this v.l.f. club is to be admired and could be very well followed by other such societies. The 32L and 37H who apparently just hold business meetings once a week and run a QSL bureau for the benefit of members. How about it Kingsford, N.S.W. Experimental Society and Waverley? Perhaps we are a little harsh because we have it on authority that there is another very active club at Hurstville who do cater for the members of the 32L and 37H. The 32L and 37H field days recently on 50 and 144 Mc. and also do have an enthusiastic management committee. Nice idea for Gladenville and Hurstville to get together and arrange a combined v.l.f. field day before the winter sets in!

The last meeting of the N.S.W. V.H.F. Section was held on 11th March at Science House and Mr. Bird, VK2Q, an engineer at A.W.A. Ltd. delivered a most interesting lecture on "Methods of Coupling Beam Antennae to Feed Lines to Cater for Full 360 Degrees Rotation." Mr. Bird covered his subject thoroughly and their conversation on the subject proved very simple when worked out on the blackboard. Mr. Bird was thanked for his fine effort in the use of v.h.f. and promised to publish this talk in a future edition of "The V.H.F. Section." The next V.H.F. Section in May will include a lecture to be arranged and the annual election of officers.

At this stage we would welcome 2PH and 2LQ on v.l.f. and judging by their conversation on this and that, they should feel at home almost immediately. From memory both are using 807s in final and converters for receiving.

Country activity on 50 Mc. is increasing and 2GJ, 2TA, 2TC, 28U, 2ADT, 18Z, 28Q, 2A8A are contacted regularly and we believe 2ACP will shortly be operating from Katoomba on low power.

The weekly broadcast of news and activities to members and enthusiastic non-members of the W.I.A. has, up till recently, been transmitted by 2NP but this station, for domestic reasons, has had to relinquish its licence. The W.I.A. has now volunteered to carry on with the good work, therefore 2WI can be heard on Sunday nights at 8 p.m. on a 30 Mc. beam. The W.I.A. has excellent coverage from Newcastle to Canberra and listeners will have no difficulty whatsoever in hearing him. This transmission is also relayed by several on 144 Mc. to cater for those who inhabit this band.

That completes the notes for this month and would like to thank those who co-operated by supplying news of activities on the various bands, not forgetting 2PK who can operate on 276 Mc. and is looking for more contacts. Such enthusiasm!

It is possible that those notes in future will be written by a different hand and if such is the case we would like to welcome the person whose reputation be extended to the new scribe whoever he may be. It helps a lot to make up a decent story and it is a pity that the person who writes "two-die" which is evidenced on occasions in other columns. What we want is real news and descriptions of any new and interesting equipment for v.h.f. that you are using or contacted by using v.h.f. So with those thoughts in mind we leave you to it and may 1949 be as successful as 1948 on frequencies above 50 Mc.

VICTORIA

50 Mc.—There is not a great deal to report this month. With the cessation of Sporadic E, for the time being at least, activity has dropped somewhat although the band has by no means been dead and contacts with many stations have continued. 38K's skeds with 32L and 37H help keep the country boys interested. 50U at Tatum has worked 2ACL in Red Hill, a distance of 137 miles with good signals both ways. 30D at Hornsea is still looking for Melbourne contacts and is on the band nightly from 8 p.m. onwards; he has not broken through since the occasion reported in the last issue.

32L at Red Hill now has his beam 42 feet high and is getting much better results, he can now work 32L and 37H stations fairly easily. The 32L gang has been keeping the band going in Melbourne. 38D has had the bad luck to get renewed h.c.f. it is in the air as yet, but he is keeping by using n.b.f.m. he is able to keep in touch with the band.

144 Mc.—Activity has been at a fairly high level during the month, with newcomers to the band and 32L and 37H. Some interesting portable mobile work was done on the evening of 30th

February by 3YS on Pretty Sally Hill, returning from the N.Y. Zone Convention. He contacted 8BQ and 8CP from the top of the hill and then worked them mobile coming down, when the signals began to rise and actually became stronger than they were on the top of the hill. It looks as if the 32L and 37H reflector and this may explain anomalous results obtained by certain stations on both 50 and 144 Mc.

30D of Hornsea should be on the band looking for contacts by the time this appears. His rig is 6J5 c.o., two 2F50s as doublers, 832 tripler, 928B final, and the converter is a band-pass 6AK6-6AK5-6J5 job. 32L and 37H is now driving a 32L from his 32Z and using up to 100 watt output. His converter is interesting, it uses trough line circuits and gives very good results. He is building a replica which he is going to send to Melbourne stations to obtain comparisons. 32L works 3ABA at 9 p.m. on Thursdays and Saturdays and then looks for other Melbourne stations.

3BW at Pearlandring now has his 6AK5-6AK5-6J5 band-pass converter going well and is much more active on the band. 3AKI is also getting good results from a band-pass converter. 3IM at last has a beam giving good gain, it consists of two four element v.u. beams stacked half wave apart and fed with 500 ohm line.

A field day was held Sunday, 6th March. 3ABA, at One Tree Hill near Chesham Hills, worked six stations including 3ANW, 3VL and 3VF. 3ANW was powered by Mr. Buninyong and worked eight contacts (32L and 3ABJ in Ballarat, 3VF in Drysdale, and the rest were with Melbourne stations). 3VL was also portable in the Red Hill district but complete details are not available of results achieved.

580 Mc.—An interesting demonstration of 580 Mc. gear was given at the March 27th Group meeting. 8NW had a transceiver using a 955 with a half wave line, and also had a corner reflector antenna. 8AKZ also used a half wave line 955 transceiver. 3ER had a simple pull oscillator using RL18s with plate and cathode lines, and 3IM had a transceiver using a single RL18 with a quarter wave line.

Others who have been experimenting with the band are 8XA, who has been trying out a 6J6; 8CR who has a 15R working; and 3QO who has a 6J5 and 8H. 3H has a 6J5 and 8H. The plates being tapped down the line. This set-up can be used as a receiver by changing the grid leak. 3IM and 3QO have worked cross band 50 to 580 Mc. both ways so a two way contact is possible on the band.

The V.H.F. Group would like to thank John Becherer who has been very helpful in the number of RL18s that he found available for the members. This should enable quite a few more chaps to get going on this very interesting band.

WESTERN AUSTRALIA—Compiled by VK6FC

The 50 Mc. band seems to have packed up for good after the activities of November, December and January were just about. Metropolitan Amateurs, 6LW and 6FC, etc., heard nothing. 6WG at Albany liked to go to the 50 Mc. band, but it is fairly safe to say that if 6WG at Albany heard nothing, neither did 6HM at Kalgoorlie.

Townsville, Cairns and Brisbane Range Rangos have been heard during February at good strength from time to time in Perth, but no sign of any signal on the 50 Mc. band. The 32L and 37H are working. We are wondering what March holds in store. 6BC at Mindling had his share of excitement, having worked five VKs, three VKs, heard a VK3 and VK4. I understand that 6BC at Bendy Rock still needs to work a VK5 before he can qualify for W.A.S.

CORRESPONDENCE

GENTLEMAN'S AGREEMENT

362 Anzac Highway, Mornington, S.A.
Editor "A.R." Sir,

With the temporary absence from Ham Radio of VK3JR, it is up to someone else to wield the battle axe against the phone QRM on the low frequency end of the 7 Mc. band. Many a time Ted got to his feet at VK3 meetings and "went to town," verbally, on the previously mentioned offence and each time the blake was washed from the 7 Mc. band and put on to the chaps in the Eastern States.

But whatever the State, you will hear the phone down that end of the band, blotting out the DX. I want say this DX because when the phone band is left clean, the DX is there and you only need a little integrity to get it.

There is argument for and against it. Admittedly it is a gentleman's agreement, to keep out phone,

but what about the chap who wants to try a new modulator and has only one crystal, and all the other exceptions. Really to have no perfect agreement can be reached, but surely 80 Kc. out of 250 could be spared for the chaps who want that elusive 2S for 7 Mc. W.A.C.

The story goes again, "I work on 20." But although I can't remember hearing phone on the c.w. end, I pity the chap whose phone gets out about by c.w. The division of bands by Gentlemen's Agreement, must be international but how can it be internationally successful, if we can't keep the agreement here in VZ, so what about it chaps.

—ROB. S. GURR, VK5RO

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Copy must be received by 15th of month. Remittance must accompany advertisement. Calculation of cost is based on an average of six words per line.

FOR SALE—Bendix BC221 Frequency Meters complete with spare set valves, crystal, and calibration book containing operating instructions, but less carrying case, as new condition and to arrive from England shortly, £25 f.o.r. Melbourne. Brand new and tested in England 832A valves also to arrive, £3 each f.o.r. Melbourne. Sockets for 832 at 14/6 each also arriving. Order early to ensure delivery. Terms: half deposit, balance on arrival. H. Cunningham, 62 Stanhope St., Malvern, Vic.

FOR SALE—Pair 30v. Selsyns 25/-; pair 110v. Selsyns 52/6; BC342 receiver, perfect, fully modified as per "QST", with 110v. trans., £40; BC453 for Q5'er, perfect cond., £5; Biley 455 Kc. Crystal, £1; 0-0.5 amp. r.f. meters, 13/6; Ceramic butterfly condensers, 750v., 12/6; IN34s, 11/-; following tubes new and boxed 829B £3/10/-, 815 £2/10/-, 832 £2, 6J6 14/6, 6C4 9/6, 2C43 25/-; Call at 4 Kenilworth Grove, Glen Iris, or ring UY 6256 (evenings), K. McTaggart VK3NWN.

FOR SALE—S20R Hallicrafters Receiver, excellent order, £40; Palec 27 C.R.O. complete, £20; F56 Transceiver, new valves, no power pack, £6; Palec C.R.F. Valve Tester, new, £20; Weston 600 Mod. Osc., needs attention £10. VKWTR, R. J. Milledge, 8 Montague St., Newtown, Tas.

WANTED—One 18-pin cable connector, one co-ax. connector for Bendix 522. Please write direct and state price to VK6WG, Box 42, Albany, W.A.

WANTED—455 or 465 Crystal J. Murphy, 41 Forsyth St., West Ryde, N.S.W.

3BZ TRANSMITTER (or similar type) wanted, either a.c. or d.c. operation. Write, stating price, particulars to G. Laver, Fish Creek, South Gippsland.

TRANSFORMERS OF DISTINCTION

LINE TO VOICE MATCHING TRANSFORMERS

The transformers described in this section are complementary to those listed in the previous month, and are intended to match 500 or 250 ohm output lines to any number of speakers from one to twenty inclusive.

They are high efficiency units with interleaved cores and low insertion loss. Although in many cases their nominal specifications appear suitable for direct coupling of valves to speaker voice coils, no provision has been made to prevent saturation due to superimposed direct current, and they should not be used for this application.

ITEM 65. Type No. LV10

Primary Z: 1000 ohms tapped 500 ohm-5w
Secondary Z: Speaker V-Coil 2 ohms
Base: 2-5/8 x 2 1/4 x 2 1/4" H Wgt. 1lb 8 ozs
Mntg: MH1B "S" is 7-8"
Base plate fits standard 8" speakers.
No. Speakers matched: 500 ohm-1 or 2.
No. Speakers matched: 250 ohm-2 or 4.

ITEM 66. Type No. LV20

Primary Z: 2000 ohms tap 1500 ohm, 5W.
Secondary Z: Speaker V-Coil 2 ohms
Base: 2-5/8 x 2 1/4 x 2 1/4" H Wgt. 1lb 8 ozs
Mntg: MH1B "S" is 7-8"
Base plate fits standard 8" speakers.
No. Speakers matched: 500 ohm-3 or 4.
No. Speakers matched: 250 ohm-6 or 8.

ITEM 67. Type No. LV30

Primary Z: 3000 ohms tap 2500 ohm, 5W.
Secondary Z: Speaker V-Coil 2 ohms
Base: 2-5/8 x 2 1/4 x 2 1/4" H Wgt. 1lb 8 ozs
Mntg: MH1B "S" is 7-8"
Base Plate fits standard 8" speakers.
No. Speakers matched: 500 ohm-5 or 6.
No. Speakers matched: 250 ohm-10 or 12.

ITEM 68. Type No. LV40

Primary Z: 4000 ohms tap 3500 ohm, 5W.
Secondary Z: Speaker V-Coil 2 ohms
Base: 2-5/8 x 2 1/4 x 2 1/4" H Wgt. 1lb 8 ozs
Mntg: MH1B "S" is 7-8"
Base Plate fits standard 8" Speakers.
No. Speakers matched: 500 ohm-7 or 8.
No. Speakers matched: 250 ohm-14 or 16.

ITEM 69. Type No. LV50

Primary Z: 5000 ohms tap 4500 ohm, 5W.
Secondary Z: Speaker V-Coil 2 ohms
Base: 2-5/8 x 2 1/4 x 2 1/4" H Wgt. 1lb 8 ozs
Mntg: MH1B "S" is 7-8"
Base Plate fits standard 8" Speakers.
No. Speakers matched: 500 ohm-9 or 10.
No. Speakers matched: 250 ohm-18 or 20.

The correct value of primary impedance for parallel arrangement for equal distribution of the output of an amplifier is found by multiplying the number of speakers by the line impedance. Take, for example, a 30 watts amplifier feeding six speakers from a 500 ohm line. The required primary impedance is equal to the number of speakers in parallel multiplied by the line impedance, i.e., 6 x 500, which equals 3000. Thus, Type LV30 would be selected, as this unit has a primary impedance of 3000 ohms, and the six speakers would be served from the 500 ohm tapplings of the output transformer, as 3000 divided by 6 equals 500.

Type LV 30, however, will also serve for 12 speakers, if required, but they would then be placed in parallel across the 250 ohm tapplings on the transformer, as 3000

divided by 12 equals 250 ohms, and the reflected load would still be correct.

In many installations, however, owing to varying noise levels and other modifying factors, each speaker may be called upon deliver different amount of power. In these circumstances, the primary impedance may be determined by applying the following formula—

$$Zx \text{ equals } \frac{W}{W_s}$$

where Zx equals the primary impedance to be determined. Z equals the value of line impedance to be used.

W equals the power in watts from the amplifier.

Ws equals the required power for each speaker. As an example, a 30 Watts amplifier using 500 ohm line output is to have 3 speakers, and each speaker is to have the following power distribution—

Speaker No.	Watts Each	Method of Calculation	Impedance Z x W + Ws	Regd-Zx Type No.
1	10	500 x 30 + 10	1500	Use LV20
2	8	500 x 30 + 8	1575	Use LV20
3	3	500 x 30 + 3	5000	Use LV20
4	5	500 x 30 + 5	3000	Use LV40
5	4	500 x 30 + 4	3700	Use LV50

Substituting LV20 (2000 ohms) for speaker No. 2 and LV40 (3500 ohms) for speaker No. 3 means that standard units may be used, with a slight decrease in power to speaker No. 2 and a slight increase in power to speaker No. 3.

These five transformers when wired in parallel would present a terminal impedance of 315 ohms approximately which is a negligible degree of mismatching.

HIGH FIDELITY LINE TO VOICE COIL TRANSFORMERS

The following high level line to voice coil or recording head input transformers are complementary to the "A" and "AW" series shown last month. These transformers are high fidelity units with an individual insertion loss of not greater than 0.5 db and a frequency range +/- 0.5 db 25 cps to 15 Kcs/s.

References to the their dimensions will indicate the large core structures adopted to keep iron distortion to negligible proportions by the use of low flux inductions at the maximum signal voltages incurred.

ITEM 70. Type No. VW15

Primary Z: 500 ohms 34db, 15 Watts
Secondary Z: Speaker V-Coil 15 ohms Voice Coil
Base: 2 1/4 x 2 1/4 x 2 1/4" H Wgt. 3lbs.
Mntg: V14 "S" is 1 1/4"

ITEM 71. Type No. VW 126

Primary Z: 500 ohms 39 db, 45 Watts
Secondary Z: Speaker V-Coil 12 ohms tapped 6 ohms
Base: 4 1/4 x 4 x 3 3/4" H Wgt. 10 lbs.
Mntg: VS10 "S" is 2 1-8"

ITEM 72. Type No. VW84

Primary Z: 500 ohms 39 db, 45 Watts
Secondary Z: Speaker V-Coil 8 ohms tapped 4 ohms
Base: 4 1/4 x 4 x 3 3/4" H Wgt. 8 lbs.
Mntg: VS10 "S" is 2 1-8"

ITEM 73. Type No. VW 265

Primary Z: 500 ohms 39 db, 43 Watts
Secondary Z: Speaker V-Coil 2 ohms tapped 0.5 ohms
Base: 4 1/4 x 4 x 3 3/4" H Wgt. 8 lbs.
Mntg: VS10 "S" is 2 1-8"

RED LINE EQUIPMENT PTY. LTD.

TRANSFORMER ENGINEERS

WORKSHOP: Cent. 4773. CITY OFFICE: MU 6895
2 Coates Lane, Melbourne (3 lines). 157 Elizabeth St., Melbourne.

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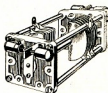
Model 120A. 21 Ranges-Sensitivity 1000 ohms per volt.
Weight with battery 14 ozs. High grade shock-
proof moulded case measures 4 1/2" x 3 1/2" x 1-15/16
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age variations. Extremely accurate on all ranges.

D.C. Volts	D.CmA	AC Volts	Resistance
0-0.25	0-1	0-50	0.5-20 - 20000ohms
0-10	0-10	0-50	50-2000-200,000ohms
0-50	0-50	0-250	+500 - 200,000 - 2 Meg. ohms
0-250	0-500	0-500	+5000 - 200,000 - 20 Mcg. ohms
0-500	0-1000	0-1000	
0-1000	0-2500	0-2500	

PRICE ... £9/17/6

EDDYSTONE TRANSMITTING CONDENSER

Identical in construction—length only varying according to capacity value—the condensers listed have ceramic and plates 2 1/2" square—Single point rotor earthing connection prevents circulating RF currents. Lugs on the stators permit either the direct fixing of the associated coil or for connections to stand-off insulators, etc. Alternative contact points available. Vane spacing .8"—adequate for high voltages, provided D.C. is removed by insertion of blocking condenser between rotor and earth. Metal parts, including spacing pillars, supplied for three point chassis fixing. Standard 1/2" spindle. Each condenser of the split stator type, directly applicable to balanced circuits. For aerial tuning and single-ended circuits, one section may be used singly or both can be connected in parallel. A wide range of working capacities thus becomes available.



No. 611	57/- Plus Tax
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RF CHOKES

AEIGIS obtainable in 1 to 4 Pyc including tapered 2.5 inductance.

NOTE:

R.F. Chokes are available on any inductance of specification supplied.

CRYSTAL FILTER

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PUT 455KC. Price 8/3
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